

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A roll for use in a galvanizing pot, comprising a hollow body, and shaft portions connected to said body, said body being made of a silicon nitride ceramic having thermal conductivity of 50 W/(m·K) or more at room temperature, said body having an average surface roughness Ra of 1-20 μm , and said shaft portions being made of ceramics,

wherein an inner surface of said body comprises large-diameter regions on both ends and a small-diameter region in between the large diameter regions, and each of said shaft portions is an integral hollow cylinder having a small-diameter portion, a large-diameter portion and a flange connecting said small-diameter portion and said large-diameter portion, said small-diameter portion and said large-diameter portion of each of said shaft portions have approximately the same thickness, and the large-diameter region of said body is connected to and in direct contact with the large-diameter portion of said shaft portion, and

wherein said flange expands in outer and inner diameter from said small-diameter portion to said large-diameter portion.

2. (withdrawn): The roll for use in a galvanizing pot according to claim 1, wherein said silicon nitride ceramic comprises 0.2% or less by weight of aluminum and 5% or less by weight of oxygen.

3. (withdrawn): The roll for use in a galvanizing pot according to claim 1, wherein said silicon nitride ceramic has a relative density of 98% or more, and a 4-point bending strength of 700 MPa or more at room temperature.

4. (withdrawn): The roll for use in a galvanizing pot according to claim 1, wherein said silicon nitride ceramic has a coefficient R of 600 or more, said coefficient R being expressed by the formula of $R = \sigma_c(1-\nu) / E\alpha$, wherein σ_c represents a 4-point bending strength (MPa) at room temperature, ν represents a Poisson's ratio at room temperature, E represents a Young's modulus (GPa) at room temperature, and α represents an average thermal expansion coefficient from room temperature to 800°C.

5. (canceled).

6. (previously presented): The roll for use in a galvanizing pot according to claim 1, wherein each of said shaft portions is provided with pluralities of longitudinal grooves extending through said large-diameter portion and said flange, said grooves forming apertures communicating with the inside of said roll in a state where said shaft portions are connected to both end portions of said body.

7. (previously presented): The roll for use in a galvanizing pot according to claim 1, wherein each large-diameter region of said body is shrink-fit to the large-diameter portion of each shaft portion.

8. (original): The roll for use in a galvanizing pot according to claim 7, wherein the shrink-fitting ratio of each large-diameter region of said body to the large-diameter portion of each shaft portion is in a range of 0.01/1000 to 0.5/1000.

9. (previously presented): The roll for use in a galvanizing pot according to claim 7, wherein a ratio of an inner diameter S_b of each small-diameter region of said body to an inner diameter S_a of each large-diameter region of the body is 0.9 or more and less than 1.0.

10. (previously presented): The roll for use in a galvanizing pot according to claim 7, wherein the large-diameter region of said body is longer than the large-diameter portion of said shaft portion, so that there is a gap between an end of each small-diameter region of said body and an inner end of said shaft portion.

11. (previously presented): The roll for use in a galvanizing pot according to claim 7, wherein a ratio of an effective length L_s to an outer diameter D_L of the large-diameter portion of each shaft portion is 0.5-2.0.

12. (previously presented): The roll for use in a galvanizing pot according to claim 7, wherein a ratio of an outer diameter S_{out} of said body to an outer diameter D_s of the small-diameter portion of each shaft portion is 2-10.

13 (new): A roll for use in a galvanizing pot, comprising a hollow body, and shaft portions connected to said body, said body being made of a silicon nitride ceramic having thermal conductivity of 50 W/(m·K) or more at room temperature, said body having an average surface roughness Ra of 1-20 μm , and said shaft portions being made of ceramics,

wherein an inner surface of said body comprises large-diameter regions on both ends and a small-diameter region in between the large diameter regions, and each of said shaft portions is an integral hollow cylinder having a small-diameter portion, a large-diameter portion and a flange connecting said small-diameter portion and said large-diameter portion, and the large-diameter region of said body is connected to the large-diameter portion of said shaft portion, and

wherein each of said shaft portions is provided with pluralities of longitudinal grooves extending through said large-diameter portion and said flange, said grooves forming apertures communicating with the inside of said roll in a state where said shaft portions are connected to both portions of said body.